**1.** A carbohydrate which cannot be hydrolysed to simpler compounds is called.

(a) Monosaccharide (b) Disaccharide
(c) Polysaccharide (d) Oligosaccharide.

**2.** Monosaccharides contain

(a) Always six carbon atoms (b) Always five carbon atoms
(c) Always four carbon atoms (d) May contain 3 to 7 carbon atoms.

**3.** Which of the following carbohydrates is a monosaccharide ?

(a) Sucrose (b) Maltose
(c) Fructose (d) Starch

**4.** Glucose is a/an

(a) Aldohexose (b) Aldopentose
(c) Aldotetrose (d) Ketohexose

**5.** Which one of the following is a pentose sugar ?

(a) Ribose (b) Glocose
(c) Fructose (d) All the three

**6.** All monosaccharides containing five or six carbon atoms have

(a) Open chain structures (b) Pyranose structures
(c) Furanose structures (d) May have pyranose or a furanose structures

**7.** A dextrorotatory sugar present in fruits is :

(a) Glucose (b) Fructose
(c) Cellulose (d) Starch

**8.** Which of the following reduces Tollen's reagent ?

(a) Glucose (b) Fructose
(c) Lactose (d) All

**9.** Which of the following is a non-reducing sugar ?

(a) Sucrose (b) Maltose
(c) Lactose (d) Ribose

**10.** Glucose reduces

(a) Tollen's reagent (b) Fehling's solution
(c) Benedict's solution (d) All

**11.** The reagent used to detect sugar (glucose) in the urine is :

(a) Tollen's reagent (b) Fehling's solution
(c) Baeyer's reagent (d) Brady's reagent

**12.** Which of the following form/s osazone with phenylhydrazine ?

(a) Glucose (b) Fructose
(c) Maltose (d) All the three above

**13.** Glucose and mannose are :

(a) Optical isomers (b) Anomers
(c) Epimers (d) Chain isomers

**14.** The function of glucose is to :

(a) Provide energy (b) Promote growth
(c) Prevent diseases (d) Perform all the above

**15.** A disaccharide on hydrolysis gives

(a) Two molecules of the same monosaccharide
(b) One molecule each of two different monosaccharides
(c) Three molecules of the same monosaccharide
(d) Two molecules of same or different monosaccharides.

**16.** Complete hydrolysis of cellulose yields

(a) L-glucose (b) D-fructose
(c) D-glucose (d) D-ribose

**17.** The two forms of D-Fructopyranose differ in the configuration at

(a) C-1 (b) C-2
(c) C-3 (d) C-4

**18.** Starch is polymer of

(a) α-D-Glucose (b) β-D-Glucose
(c) α-D-Glucose and β-D-Glucose (d) α-D-Fructose

**19.** The change in optical rotation, with time, of freshly prepared solution of sugar is known as
(a) Rotatory motion (b) Inversion
(c) Specific rotation (d) Mutarotation

**20.** Gun-cotton is
(a) Nitrosucrose (b) Nitrocellulose

(c) Nitroglucose (d) Nitropicrin

**21.** Which of the following monosaccharide is a pentose
(a) Galactose (b) Glucose
(c) Fructose (d) Arabinose

**22.** Amide group is present in
(a) Lipids (b) Carbohydrates
(c) Amino acids (d) Proteins

**23.** Which of the following is a carbohydrate
(a) Leucine (b) Albumin
(c) Inulin (d) Maltase

**24.** General formula for carbohydrates is
(a) $C_nH_{2n}O_{2n+2}$ (b) $C_x(H_2O)_{2x}$
(c) $C_x(H_2O)_y$ (d) None of these

**25.** Glucose gives silver mirror with Tollen's reagent. It shows the presence of
(a) An acidic group (b) An alcoholic group
(c) A ketonic group (d) An aldehydic group

**26.** A certain compound gives negative test with ninhydrin and positive test with Benedict's solution. The compound is
(a) A protein (b) A monosaccharide
(c) A lipid (d) An amino acid

**27.** Glucose when heated with $CH_3OH$ in presence of dry $HCl$ gas gives $\alpha$ and $\beta-$methyl glucosides because it contains
(a) An aldehyde group (b) A $-CH_2OH$ group
(c) A ring structure (d) Five hydroxyl groups

**28.** Which carbohydrate is used in silvering of mirrors
(a) Sucrose (b) Starch
(c) Glucose (d) Fructose

**29.** The aqueous solution of a carbohydrate gives dark blue colour with iodine. It is
(a) Glucose (b) Fructose
(c) Sucrose (d) Starch

**30.** Optical activity is shown by
(a) Glucose (b) Fructose
(c) Sucrose (d) All of these

**1.** (a)
**2.** (d)
**3.** (c) Fructose is not hydrolysed simple compounds hence called monosaccharide.

**4.** (a) Glucose has aldehyde group and six carbon chain.

**5.** (a) Ribose have five carbon atoms.

**6.** (d)
**7.** (a)
**8.** (d) Aldehyde and α-hydroxy ketones reduces the Tollen's reagent.

**9.** (a) Sucrose has acetal glycosidic linkage so it can't reduce the Tollen's reagent and called non-reducing sugars.

**10.** (d)
**11.** (b)
**12.** (d) Aldehyde and α-hydroxy ketone can give osazone with phenylhydrazine.

**13.** (c)
**14.** (a)
**15.** (d) A disaccharide on hydrolysis gives two molecules of the same or one molecule each of two different monosaccharides.

**16.** (c)
**17.** (b)
**18.** (a) Starch is polymer of α - D - glucose.

**19.** (d) $\underset{\substack{[\alpha]=+112^{o}\\(36\%)}}{\alpha-D-\text{Glucose}} \rightleftharpoons \underset{\substack{[\alpha]_D=+52^{o}\\(0.02\%)}}{\text{Equilibriu m mixture}} \rightleftharpoons \underset{\substack{[\alpha]_D=+19^{o}\\(64\%)}}{\beta-D-\text{Glucose}}$

Glucose has two forms $\alpha$ and $\beta$. When either of these two is dissolved in water and allowed to stand, it gets converted to an equilibrium mixture of $\alpha$ and $\beta$ forms.

**20.** (b)Gun-cotton is a nitrocellulose or cellulose trinitrate which is used in explosive and as a binder for solid rocket propellant.

**21.** (d)Arabinose is an aldopentose $HOCH_2-(CHOH)_3-CHO$

**22.** (d)In proteins amide group is present

$$(-NH-\underset{\underset{R}{|}}{CH}-\underbrace{\overset{\overset{O}{||}}{C}-NH}_{\text{Amino or peptide bond}}-\underset{\underset{R}{|}}{CH}-\overset{\overset{O}{||}}{C}-)_n$$

**23.** (c)Inulin is a carbohydrate which is stored in “Roots of Dahliya”.

**24.** (c) Carbohydrates are hydrates of carbon. Their general formula is $C_x(H_2O)_y$.

**25.** (d)Glucose + Tollen’s reagent $\rightarrow$

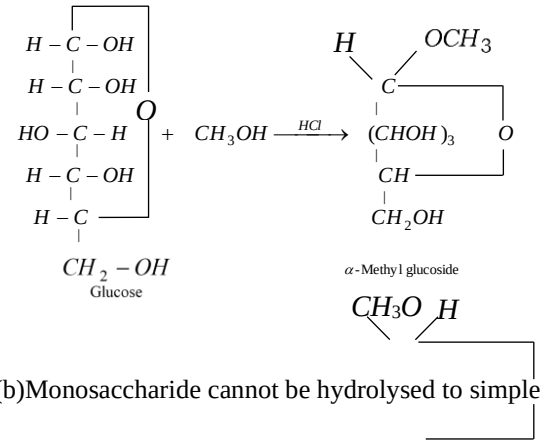
Gluconic acid + *Ag*-mirror.

**26.** (b) Protein gives blue-violet colour with ninhydrin

(2, 2-dihydroxyindane-1, 3-diene)

Carbohydrates gives brown red ppt. with benedict's solution (Alk. $CuSO_4$ + Citrate ions)

**27.** (c)A ring structure




**28.** (b)Monosaccharide cannot be hydrolysed to simple forms.

**29.** (d)Starch + $I_2$ $\rightarrow$ Blue colour.

**30.** (d) Glucose and sucrose are dextrorotatory Fructose is leavorotatory